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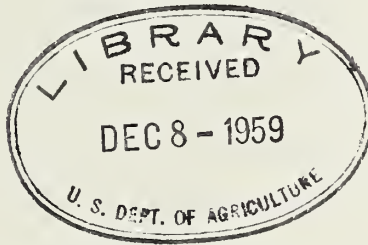
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UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Marketing Service
Dairy Division
Washington, D. C.



RECOMMENDED MINIMUM SPECIFICATIONS
FOR DAIRY PLANT OPERATIONS

Agriculture--Washington

PREFACE

Milk is a highly nutritious food, extensively used, and essential to the human diet. To preserve its special characteristics, producers and processors should handle it with extreme care. This is necessary so that products made from milk will be palatable and wholesome.

Minimum production requirements for manufacturing milk are in force in only a few states and even these are somewhat lacking in uniformity. Many manufacturers of dairy products and regulatory officials have expressed the opinion that adequate minimum standards for manufacturing milk, for use on a nation-wide basis, are essential and should be established. The "Recommended Minimum Production Requirements for Manufacturing Milk" was prepared as a first step toward establishing such a standard.

This companion publication, "Recommended Minimum Specifications for Dairy Plant Operations," is offered as a guide towards improving manufacturing operations and a further step toward attaining maximum quality and stability in finished dairy products.

Both of these standards are proposed for use by regulatory agencies and industry groups in producing states. They are intended to (1) encourage the production of good quality milk, (2) promote efficient and sanitary processing, (3) assure stable high quality dairy products, and (4) increase the appeal of these products and their acceptance by consumers.

These recommended standards, it should be emphasized, are MINIMUM standards.

The few states which have stricter bacterial standards for manufacturing milk would undoubtedly retain them. However, those states

may wish to consider adoption of these specifications pertaining to dairy plant operations. In states where these standards are not adopted, individual plants or groups of plants or organizations may adopt them and use them as a guide to higher quality.

The Dairy Division, Agricultural Marketing Service, United States Department of Agriculture gratefully acknowledges valuable assistance and guidance in the formulation of these standards from numerous industry technicians representing all segments of the manufacturing milk industry, several technicians representing State universities and colleges, and representatives from other Government agencies.

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURE MARKETING SERVICE
DAIRY DIVISION
WASHINGTON 25, D. C.

April 24, 1959

UNITED STATES DEPARTMENT OF AGRICULTURE
RECOMMENDED MINIMUM SPECIFICATIONS
FOR DAIRY PLANT OPERATIONS

DEFINITIONS

58.401 Dairy plant.--"Dairy plant" means any place, premises or establishment, licensed by the responsible regulatory agency, where milk or milk products are received, handled, processed, manufactured, stored and/or prepared for distribution.

58.402 Dairy products.--"Dairy products" for human consumption, means butter, cheese (whether natural or processed), milk, cream, ice cream, buttermilk, whey, milk products (whether dry, evaporated, stabilized or condensed), and such other dairy products as the responsible regulatory agency may hereafter designate.

58.403 Fieldman.--"Fieldman" means a person who is qualified and trained in the sanitary methods of production and handling of milk, and is generally employed by a processing or manufacturing plant for the purpose of dairy farm inspection and quality control work.

58.404 Inspector.--"Inspector" means an employee of the responsible regulatory agency, who is qualified and trained and authorized to perform dairy farm inspections, plant inspections, and the grading of raw milk.

58.405 Milk.--"Milk" to be used for manufacturing means the normal lacteal secretion, practically free from colostrum, obtained by the complete milking of one or more healthy cows located in a

modified accredited area or from cows in herds fully accredited as tuberculosis-free by the United States Department of Agriculture.

58.406 Milk grader.--"Milk grader" means a person employed by the processing or manufacturing plant, who is qualified and trained, for the purpose of grading raw milk in accordance with the quality provisions contained herein.

58.407 Patron or producer.--"Patron" or "producer" means the person (or persons) who exercises control over the milk delivered to a processing plant or receiving station and who receives payment for this product. A new patron is one who has only recently entered into the production of milk.

58.408 Producer's permit.--"Producer's permit" means a written annual certification by the responsible regulatory agency that the milk producer has complied with the minimum production requirements herein provided, as evidenced by a satisfactory dairy farm sanitation inspection report filed by the official dairy inspector or fieldman.

58.409 Regulatory agency.--"Regulatory agency" means the agency or department that has authorized jurisdiction over the production and handling of milk to be used for manufacturing.

58.410 3-A Sanitary Standards.--"3-A Sanitary Standards", means the standards for dairy equipment formulated by the 3-A Sanitary Standards Committees representing the International Association of Milk and Food Sanitarians, the United States Public Health Service, and the Dairy Industry Committee.

PREMISES, PLANT, FACILITIES, EQUIPMENT, AND UTENSILS

58.420 Premises.--(a) The premises shall be kept in a clean and orderly condition, and shall be free from strong or foul odors, smoke, or excessive air pollution. Dust in driveways and immediate plant area shall be kept to a minimum. Driveways adjacent to the plant proper shall be constructed of an impervious material and washed down whenever necessary in keeping with good sanitary practice.

(b) Surroundings.--The adjacent surroundings shall also be free from refuse, rubbish, and waste materials to prevent harborage of rodents, insects and other vermin.

(c) Drainage.--A suitable drainage system shall be provided to allow rapid drainage of all water from plant buildings and surface water around the plant and on the premises, and all such water shall be disposed of in such a manner as to prevent a nuisance or health hazard.

58.421 Buildings.--The building or buildings shall be of sound construction and kept in good repair to prevent the entrance or harboring of insects, rodents, vermin, dogs, and cats. All pipe openings shall be completely cemented or provided with tight metal collars.

(a) Outside doors, windows, openings, etc.--All openings to the outer air, including doors, windows, skylight, and transoms shall be effectively protected or screened against the entrance of flies and other insects, rodents, dust, and dirt. All outside doors opening into processing rooms shall be constructed of metal or the bottom edge shall be flashed and edged with sheet metal to

a height of six inches. All hinged, outside doors shall open outward. All doors and windows shall be kept clean and in good repair. Outside conveyor openings and other special-type outside openings shall be effectively protected at all times against the entrance of flies and rodents, by the use of doors, screens, flaps, fans, or tunnels. Outside openings for sanitary pipelines shall be covered when not in use.

(b) Walls, ceilings, partitions and posts.--The walls, ceilings, partitions and posts of rooms in which milk or milk products are processed, packaged, or handled, or in which utensils are washed and stored shall be smoothly finished with a suitable material of light color which is substantially impervious to moisture and can be washed and kept clean. They shall be refinished as often as necessary to maintain a neat, clean surface.

(c) Floors.--The floors of all rooms in which milk and milk products are processed or packaged or in which utensils are washed shall be constructed of concrete, or of tile properly laid with impervious joint material, or of other equally impervious and easily cleaned material. They shall be smooth, kept in good repair, sloped so that there will be no pools of standing water after flushing and the drains shall be equipped with traps properly constructed and kept in good repair to avoid foul odors therefrom. Sound, smooth, wood floors may be used in certain rooms where applicable. The plumbing shall be so installed as to prevent any back-up of sewage into drain line and to floor of plant.

(d) Lighting and ventilation.--There shall be ample light,

natural or artificial or both, of good quality and well distributed, and adequate ventilation for all rooms and compartments to permit maintenance of sanitary conditions. All rooms where milk or milk products are processed, packaged, or handled, or where utensils and/or equipment are washed shall have at least 10 to 30 foot-candles of light intensity on all working surfaces; at least 30 to 50 foot-candles of light intensity in areas where dairy products are examined for condition and quality; and at least 5 foot-candles of light in all other rooms, when measured from a distance of 30 inches above the floor. Light bulbs and fluorescent tubing shall be protected against breakage where necessary. All rooms shall be adequately ventilated to minimize or eliminate objectionable odors and moisture condensation. Exhaust fans, vents, and hoods shall be provided where and when needed.

(e) Rooms and compartments.--Each room and each compartment in which any raw material, packaging and ingredient supplies, or finished products are handled, processed, or stored shall be so designed and constructed as to assure processing and operating conditions of a clean and orderly character, free from objectionable odors and vapors, and maintained accordingly. Where applicable, proper temperature and humidity control equipment shall be provided. Rooms for receiving milk shall be separated from the processing rooms by a partition or by a sufficient distance from other operations to avoid possible contamination of milk or milk products during processing.

(1) Coolers and freezers.--The coolers and freezers shall be equipped with facilities for maintaining proper temperature and

humidity conditions, consistent with the most desirable commercial practices for the applicable product, to protect the quality and condition of the products. Coolers and freezers shall be kept clean, dry, orderly, free from insects, rodents, and mold, and maintained in good repair. They shall be adequately lighted and proper circulation of air shall be maintained at all times. The floors, walls, and ceilings shall be of such construction to permit thorough cleaning.

(2) Dry storage (product).--The storage rooms for the dry storage of product shall be kept clean, dry, orderly, free from insects and mold and maintained in good repair. They shall be adequately lighted and ventilated. Control of humidity and temperature shall be maintained at all times consistent with good commercial practices to protect the quality of the finished products.

(3) Supply room.--The supply rooms used for the purpose of storing packaging materials, containers, and miscellaneous ingredients shall be kept clean, dry, orderly, free from insects, rodents, and mold, and maintained in good repair. Such items stored therein shall be adequately protected from dust, dirt, or other extraneous matter and so arranged as to permit cleaning, inspection, and spraying. The rooms shall be adequately lighted and ventilated. Insecticides and rodenticides shall be properly labeled and stored in a separate room or cabinet away from milk products or packaging supplies.

(4) Boiler and tool rooms.--The boiler and tool rooms shall be adequately lighted and separated from other rooms where

milk and milk products are processed, manufactured, packaged, handled, or stored.

(5) Toilet and dressing rooms.--Adequate toilet and dressing room facilities shall be conveniently located and shall not open directly into any room in which milk, milk products, or ingredients are processed, packaged or stored. The toilet rooms shall be well lighted, and ventilated by openings to the outer air. The toilet rooms and fixtures shall be kept clean and in good repair. The doors of all toilet rooms shall be self-closing. All employees shall be furnished with a locker or other suitable facility and the lockers and dressing rooms shall be kept clean and orderly. A durable, legible sign or signs shall be posted conspicuously in each toilet or dressing room directing employees to wash their hands before returning to work.

(6) Laboratory.--Consistent with the size, volume and variety of products manufactured by a plant, an adequate laboratory shall be provided, maintained and properly staffed with qualified and trained personnel for quality control and analytical purposes. It shall be located reasonably close to the processing activity in a well lighted and ventilated room of sufficient size to permit proper performance of the tests necessary in evaluating the quality of raw and finished products. A central laboratory serving more than one plant, if conveniently located to the processing plants, would be considered satisfactory.

Adequate equipment and facilities shall be provided for performing the required tests as determined by the nature and variety

of dairy products processed.

Each laboratory shall be inspected and if found to comply with these requirements, shall be approved by the responsible regulatory agency.

58.422 Facilities.--(a) Water supply (1) There shall be an ample supply of both hot and cold water; and the water shall be of safe and sanitary quality, with adequate facilities for its proper distribution throughout the plant and protected against contamination and pollution. Water from other sources, when approved by the regulatory agency, may be used for boiler feed water and condenser water provided that such water lines are completely separated from the water lines carrying the sanitary water supply, and the equipment is so constructed and controlled as to preclude contamination of any milk product or milk product contact surface. There shall be no cross connection between safe water lines and unsafe water lines. Bacteriological examination shall be made of the sanitary water supply at least twice a year, or as often as necessary, to determine purity and suitability for use in processing or manufacturing dairy products. Tests for purity and bacteriological quality shall be made by the responsible regulatory agency unless already tested for purity and bacteriological quality and approved by the local health officer. Acceptable tests for purity only of municipal water supplies by health authorities is not necessarily assurance that the water is satisfactory for use in manufacturing certain dairy products. The results of all water tests shall be kept on file for at least 12 months.

(2) The location, construction and operation of any well shall

comply with regulations of the responsible regulatory agency.

(b) Drinking-water facilities.--Drinking-water facilities of a sanitary type shall be provided in the plant and so located as to be convenient for employee use.

(c) Hand-washing facilities.--Convenient hand-washing facilities shall be provided, including hot and cold running water, soap, or other detergents, and sanitary towels or air driers. Such accommodations shall be located in or adjacent to toilet and dressing rooms and also at such other places in the plant as may be essential to the cleanliness of all personnel handling products. Self-closing metal containers shall be provided for used towels and other wastes.

(d) Disposal of wastes.--Dairy waste shall be properly disposed of from the plant and premises. The sewage system shall have sufficient slope and capacity to readily remove all waste from the various processing operations. Where a public sewer is not available, all wastes shall be disposed of by methods approved by the responsible jurisdiction agency. Accumulation of dry waste paper shall be kept to a minimum. The paper shall be compressed or bagged and hauled away or burned in an approved incinerator at the plant. Containers used for the collection and holding of wastes shall be constructed of metal or other equally impervious material and kept covered with tight-fitting lids and placed on a concrete slab or on a rack which is at least 12 inches above the ground. Solid wastes shall be disposed of regularly and the containers cleaned before reuse.

58.425 Equipment and utensils.--(a) Construction, repair and installation.--The equipment and utensils including sanitary pumps,

piping, fittings and connections, coming in contact with milk and milk products shall be constructed of stainless steel, except, for old equipment, or in cases where the use of stainless steel is not practicable, other metals properly tinned may be approved temporarily. Non-metallic parts having product contact surfaces shall be of material which is resistant to scratching, scoring, distortion, and is non-toxic, fat resistant and relatively inert, or non-absorbent or insoluble and shall not adversely affect the flavor of the product. Copper kettles for Swiss cheese, copper evaporators and brass fillers for evaporated milk may be approved temporarily if free from corroded surfaces and kept in good condition. Churns shall be metal, except, wood churns in use may be approved temporarily, if maintained in good condition.

All equipment and piping shall be designed and installed so as to be easily accessible for cleaning, kept in good repair, free from cracks and corroded surfaces. The equipment, where applicable, shall be set out approximately 24 inches from any wall or spaced at least 24 inches between pieces of equipment which measure more than 48 inches on the parallel sides. This shall not apply to storage tanks when the face of the tank extends through the wall, into the processing room. On new construction, equipment should not occupy more than 25 percent of floor space. All parts or interior surfaces of equipment, pipes or fittings, including valves and connections, except those cleaned-in-place, shall be accessible for inspection. Milk pumps shall be of a sanitary type and easily dismantled for cleaning. Cleaned-in-place sanitary piping shall be properly installed and self draining.

(b) New equipment.--New equipment, where applicable, shall meet the 3-A Sanitary Standards.

(c) High temperature short time pasteurizers.--An approved automatic flow diversion valve and holding tube or its equivalent, if not a part of the existing equipment, shall be installed on all HTST equipment used for pasteurizing, to assure complete pasteurization. When vacuum type or direct steam pasteurizers are used the steam shall be conducted through a steam strainer and a steam purifier equipped with a steam trap.

(d) Thermometers and recorders.--(1) Indicating thermometers.--

(i) Long stem indicating thermometers which are accurate within 0.5° F. plus or minus for the applicable temperature range shall be provided for the purpose of checking temperatures of pasteurization of products in vats and for checking the accuracy of recording thermometers.

(ii) Short stem indicating thermometers which are accurate within 0.5° F. plus or minus for the applicable temperature range shall be installed in the proper stationary position in all HTST and dome type pasteurizers and all storage tanks where temperature readings are required.

(2) Recording thermometers.--Recording thermometers which are accurate within 1° F., plus or minus, between 142° and 145° F., or in the case of 15 second pasteurization between 160° and 163° F., shall be used to record pasteurization temperature and time held; except on vats used solely for 30 minute pasteurization of products at temperatures above 150° F., a 2° F. accuracy, plus or minus, will be acceptable. Other recording thermometers may be required where a

record of temperature or time of cooling and holding is of significant importance.

(e) Heavy-duty vacuum cleaner.--Each milk drying plant shall be equipped with a heavy-duty industrial vacuum cleaner and regular schedules established for thoroughly vacuuming applicable equipment and areas in the plant. The material picked up by vacuum cleaners shall be disposed of properly to avoid possible contamination of the air.

PERSONNEL, CLEANLINESS AND HEALTH

58.430 Cleanliness.--All employees shall wash their hands before beginning work and upon returning to work after using toilet facilities, eating, smoking, or otherwise soiling their hands. They shall keep their hands clean and follow good hygienic practices while on duty. Expectoration or use of tobacco in any form, shall be prohibited in each room and compartment where any unpacked or exposed dairy products are prepared, processed, or otherwise handled. Clean, white, or light-colored washable outer garments, and caps (paper caps or hair nets acceptable) shall be worn by all persons engaged in receiving, testing, processing, or packaging any dairy products.

58.431 Health.--No person afflicted with any communicable disease shall be permitted in any room or compartment where dairy products are prepared, processed, or otherwise handled. No person who has a discharging or infected wound, sore, or lesion on hands, arms, or other exposed portions of the body, shall work in any dairy processing rooms, or in any capacity resulting in contact with dairy products. All plant employees shall have a medical and physical examination by a registered physician or by the local department of health and each new employee

shall be examined and furnish a satisfactory medical certificate prior to starting work. Thereafter, every employee whose work brings him in contact with the processing or handling of milk, milk products, containers, or equipment shall have a medical and physical examination at least once each calendar year. Employees returning to work following illness from communicable diseases shall have a certificate from the attending physician to establish proof of complete recovery. A medical certificate for each employee shall be on file at the plant office.

PROTECTION AND TRANSPORT OF RAW MILK

58.435 Equipment and facilities.--(a) Milk cans.--Cans used in transporting milk from dairy farm to plant shall be of such construction (preferably seamless) as to be easily cleaned, and shall be kept in good repair. Can lids, preferably umbrella type, which provide adequate protection to the milk shall be used. Inspection, repair, or replacement of cans and lids shall be adequate to substantially exclude the use of cans and lids showing open seams, cracks, rust condition, milkstone or any unsanitary condition.

(b) Bulk farm tanks.--Bulk farm tanks shall meet 3-A Sanitary Standards for construction at the time of installation and shall be installed in accordance with the requirements of the responsible regulatory agency. The tanks shall be designed and equipped with refrigeration to permit the cooling of the milk to 40° F. or lower within two hours and maintained below 50° F. until picked up. The milk shall be transferred from farm holding tanks to transport tank through stainless steel piping or approved sanitary tubing, under sanitary conditions which

will not impair the quality of the milk.

(c) Transporting milk.--Vehicles used for the transportation of milk shall be of the enclosed type, constructed and operated to protect the product from extreme temperatures, dust or other adverse conditions and shall be kept clean. Decking boards shall be provided where more than one tier of cans is carried. Cans used for transportation of milk shall not be used for the hauling of skim milk, buttermilk or whey, to producers.

Transport tanks shall be stainless steel lined and so constructed that the lining will not buckle, sag or prevent complete drainage. All milk contact surfaces shall be smooth, easily cleaned and maintained in good repair. The pump and/or hose cabinet shall be fully enclosed with tight fitting doors, give adequate protection from road dust. New and replacement transport tanks shall meet the 3-A Sanitary Standards for Milk Transport Tanks. Sanitary piping and tubing for loading and unloading transport tanks shall be capped when not in use. Facilities shall be provided for adequate washing of tank trucks, piping, and accessories, at all plants that receive or ship milk in transport tanks.

QUALITY SPECIFICATIONS FOR RAW MILK

58.440 (a) General.--The inspection of raw milk for manufacture into dairy products shall be based on organoleptic examination (sight and smell) and quality control tests for sediment content and bacterial estimate. All raw milk at receiving point or milk delivered to the receiving station or dairy plant shall be identified as to the producer, seller or shipper from whom received.

(b) Sight and odor.--Each can or farm bulk tank of milk shall be examined by a milk grader for physical characteristics, and off-odors. The milk shall be wholesome and characteristic of normal milk. The flavor and odor of the raw milk shall be fresh and sweet, free from objectionable feed flavors and practically free from off-flavors or off-odors. Any raw milk that shows an abnormal condition (including, but not limited to, curdled, ropy, bloody, mastitic or which contains toxic substances, antibiotics or other contaminants) or which shows significant bacterial deterioration, as indicated by sight or smell, shall be rejected to the producer, seller or shipper and shall not be used in the processing or manufacturing of dairy products.

(c) Sediment content classification.--For the purpose of quality control and establishing a rejection level of the milk to the producer the following classifications of the milk for sediment shall be applicable:

Sediment (off-the-bottom method):

No. 1 - USDA Sediment Standard (not to exceed) 0.50 mg.

No. 2 - USDA Sediment Standard (not to exceed) 1.00 mg.

No. 3 - USDA Sediment Standard (not to exceed) 2.50 mg.
(Probational - not over 10 days)

No. 4 - USDA Sediment Standard (over) 2.50 mg.
(Reject)

At least twice each month, at irregular intervals, one can of milk from each producer shall be selected at random and tested for sediment content by the "off-the-bottom" method of sediment testing as set forth in the latest edition of "Standard Methods for the

Examination of Dairy Products" published by the American Public Health Association, 1790 Broadway, New York, New York. The sediment discs taken shall be classified in accordance with the applicable discs of the U. S. Sediment Standards for Milk and Milk Products. A reprint of these applicable sediment disc is shown below:

If the sediment disc on the can of milk selected at random is classified No. 3 (2.50 mg.) or more, as determined on the basis of the United States Sediment Standards for Milk and Milk Products, all cans in the shipment shall be tested for sediment content and the milk which shows sediment content in excess of 2.50 mg. shall be rejected to the producer. All producers delivering milk with sediment of No. 3 or No. 4 shall be notified of the quality of their milk and furnished the applicable sediment disc. All cans of the next shipment shall be tested for sediment and if classified as No. 1 or 2, the milk is in full compliance with respect to sediment. If one or more cans on this retest are found containing sediment of No. 3 or in excess of No. 3, all cans of milk are to be retested on the following shipment. This procedure of retesting daily all cans may be continued over a time period not exceeding ten days.

If at the end of ten days or six consecutive retests the producer has been unable to meet the minimum requirements (No. 2 or better) no more milk shall be received from this producer. (See. 58.445 for procedure to obtain reinstatement).

In the case of milk held in bulk farm tanks a representative sample shall be taken in accordance with procedure described in "Standard Methods" for bulk sediment testing, which will yield results comparable to the "off-the-bottom" method of sediment testing for individual cans, and properly classified in accordance with the aforementioned United States Sediment Standards for Milk and Milk Products.

(d) Bacterial estimate classification.--For the purpose of quality control and establishing a rejection level of the milk to the producer, the following classification of the milk for bacterial estimate shall be applicable:

Bacterial Estimate Classification	Direct Microscopic Clump Count or Standard Plate Count not over	Methylene Blue Test Decolorized in not less than	Resazurin Reduction Time to Munsell Color Standard P 7/4 not less than
No. 1	500,000 per ml.	4½ hours	2¼ hours
No. 2	3,000,000 per ml.	2½ hours	1½ hours
No. 3	10,000,000 per ml.	1 hour	¾ hour
No. 4 (Probational not over 4 weeks)	over 10,000,000 per ml.	less than 1 hour	less than ¾ hour

At least twice each month a bacterial estimate shall be made on a mixed sample of each producer's milk by the direct microscopic clump count, standard plate count, methylene blue test, or resazurin test as set forth in the latest edition of "Standard Methods for the Examination of Dairy Products," published by the American Public Health Association, 1790 Broadway, New York, New York.

If any of the milk delivered by any producer shows a bacterial estimate of No. 4 (over 10,000,000 per ml.) the operator of the dairy plant shall notify the producer immediately. The milk from such producer shall be tested at least weekly, until the causes have been corrected and the bacterial counts again comply with No. 3 or better. If at the end of four weeks the producer has been unable to meet the minimum requirements (No. 3 or better) no further shipments of milk shall be accepted from this producer. (See 58.449 for procedure to obtain reinstatement.)

(e) Acceptable milk.--Acceptable milk is milk that qualifies under Section 58.335, paragraph (b) sight and odor, and that is classified as No. 2 or better for sediment content and No. 3 or better for bacterial estimate. Milk classified as No. 3 for bacterial estimate shall require action on the part of the producer for improvement.

(f) Probational milk.--(1) Sediment--Milk classified as No. 3 for sediment shall be considered as "Probational Milk" and the period of time in which such milk may be accepted shall not exceed 10 days. (2) Bacterial estimate---Milk classified as No. 4 for bacterial estimate shall be considered as "Probational Milk" and

the period of time in which such milk may be accepted shall not exceed 4 weeks.

(g) Reject milk.--Milk which fails to meet the requirements of paragraph (b) of this section for organoleptic examination or classified as No. 4 for sediment content or after 4 weeks, No. 4, for bacterial estimate, shall be considered reject milk. All such milk shall be identified by a reject tag or by the addition of a harmless food coloring, depending upon the applicable regulations of the responsible regulatory agency. Only milk graders, fieldmen or state dairy inspectors are authorized to reject milk and identify such milk with a reject tag or by the addition of harmless food coloring.

(h) Quality testing of milk from new producers.--A sediment test shall be made on the first shipment of milk received from a new patron and the milk shall not be accepted unless it qualifies as No. 3 or better. Also the initial shipment of milk shall be tested for bacterial estimate. Retesting if needed shall be initiated to conform to the requirements for regular producers.

(i) Record of tests.--Accurate plant records, listing the results of quality tests made on raw milk, shall be maintained on each producer's milk. Each producer shipping probational or reject milk shall be informed immediately of the results of such quality tests. Such records shall be available for examination by the inspector and kept on file for at least 12 months.

RAW MILK PROGRAM OPERATION

58.445 Milk graders.--Each plant shall provide one or more milk

graders who shall inspect each can of milk for odor and physical appearance in accordance with paragraph (b) of Section 58.440.

58.446 Milk graders--bulk milk haulers.--Tank truck operators who transport milk from producer bulk tanks to the dairy plant, when qualified as milk graders, shall inspect each farm tank of milk for odor and physical appearance in accordance with paragraph (b) of Section 58.440. He also shall be trained for taking samples as required for laboratory classification.

58.447 Field service.--An authorized fieldman shall visit promptly, and preferably within 3 days, each producer involved in the production of probational or reject milk, for the purpose of inspecting the equipment, utensils, facilities and sanitary practices at the farm and to offer constructive assistance for improvement in the quality of the milk. A copy of the fieldman's inspection report shall be furnished the producer and a copy filed at the dairy plant.

If the producer is unable or unwilling to comply with the minimum production requirements, after assistance by inspector or fieldman, the receiving dairy plant shall immediately discontinue buying the milk and notify, in writing, the responsible regulatory agency.

58.448 Exclusion of milk from the market.--Every operator of a licensed dairy plant shall refuse to purchase milk from any producer on the basis of the following:

(a) When the milk has been in a Probationary (No. 3) status for sediment content for 10 days or six consecutive deliveries, or No. 4 for bacterial estimate for more than four weeks, or

(b) When any producer is unable or unwilling to correct conditions

on the farm to comply with the minimum production requirements; except, that when corrections require some capital investment, a reasonable time may be granted to complete such improvements, or

(c) When any producer refuses to permit the inspection of his production facilities.

58.449 Producer reinstatement.--When the producer has made the necessary corrections at the dairy farm he may apply to the fieldman or dairy inspector of the responsible regulatory agency for reinspection and reinstatement of permit. If the suspension was based on inspections of the regulatory agency inspector then only such agency inspector may authorize reinstatement of permit.

58.450 Transfer of records.--When a producer for any reason changes delivery of milk from one plant to another he may do so provided he has a valid permit and the plant records show compliance with minimum production requirements or in case the receiving plant, for reasons other than noncompliance, is unable or unwilling to accept milk from a producer.

The producer shall furnish the new receiver with a copy of the most recent record of farm inspections and milk quality tests records for the past three months supplied by the previous receiver. If the previous receiver is unwilling or unable to supply the necessary producer records, the new receiver may accept the milk, based on established testing procedures, and report such failure or refusal to the responsible regulatory agency.

58.451 Supervision of program.--The responsible regulatory agency shall have responsibility for supervision of the program and

and the dairy inspector assigned shall:

(a) Check the farm inspection records and quality tests of the milk for individual producers at each dairy plant at periodic intervals.

(b) Check the grading of the milk to determine that the milk is being graded in accordance with the established procedures.

(c) Review the fieldmen's work to determine that they are making proper dairy farm inspections and reports, and compare the results of such inspections with the plant records.

(d) Assist plant management, laboratory and field staffs, with producer educational programs relating to quality improvement of milk.

PLANT OPERATIONS AND OPERATING PROCEDURES

58.455 Clean and sanitary methods.--All operations in receiving, segregating, holding, processing, packaging, and storing of dairy products shall be strictly in accordance with clean and sanitary methods and shall be conducted rapidly, and consistent with best commercial practices.

58.456 Bulk raw milk and bulk raw cream storage.--Bulk milk and cream in storage tanks within the processing plant or receiving station shall be handled in such a manner as to minimize bacterial increase and be maintained at 45° F. or lower until processed, except, that milk used for cheese making may be stored at a temperature not to exceed 50° F.

58.457 Pasteurization.--(a) General.--When required or when a product is designated as "Pasteurized", pasteurization shall be accomplished in approved equipment which will heat every particle of

product to a temperature of not less than 145° F. and hold it at that temperature for not less than 30 minutes, or at a temperature of 161° F. for not less than 15 seconds, or by any other combination of time and temperature giving equivalent results for bacterial destruction. The phenol value of the pasteurized product shall be no greater than the minimum specified for the applicable product, as determined by the phosphatase test, Method II of the Association of Official Agricultural Chemists, published in the latest edition of Standard Methods for the Examination of Dairy Products.

Higher temperature or longer holding time or both shall be used when such procedures would serve to produce a product of higher quality or improve the keeping quality.

(b) Cream for butter making.--The pasteurization of cream for butter making shall be at a temperature of not less than 165° F. and held continuously in a vat at such temperature for not less than 30 minutes; or pasteurized at a temperature of not less than 185° F. for not less than 15 seconds; or any other temperature and holding time which will assure proper pasteurization and comparable keeping-quality characteristics. If the vat method of pasteurization is used, vat covers shall be kept closed during the holding period.

58.458 Laboratory control tests.--Quality control tests shall be made on flow samples as often as necessary to check the effectiveness of processing, and as an aid in correcting deficiencies in processing. Routine analyses shall be made on raw materials and finished products to assure adequate composition control. When applicable, keeping-quality tests shall be made to determine product

stability. Records of all tests shall be maintained on file for at least 12 months.

58.459 Composition and wholesomeness.--All ingredients and finished products shall comply with the provisions of the Federal Food, Drug and Cosmetic Act and State regulatory agencies as to composition and wholesomeness and all necessary precautions shall be taken to prevent the contamination of any dairy product.

58.460 Cleaning and bactericidal treatment.--(a) Equipment and utensils.--The equipment, sanitary piping, and utensils used in the receiving, storing, processing, packaging and handling of milk and milk products shall be maintained in a sanitary condition. All equipment not designed for C-I-P cleaning shall be disassembled daily for thorough cleaning and sanitizing. Dairy cleansers, detergents, wetting agents or sanitizing agents, or other similar materials may be used which will not contaminate or adversely affect the products. Steel wool or metal sponges shall not be used in the cleaning of any dairy equipment or utensils. Immediately prior to use, all equipment coming in contact with milk or milk products shall be subjected to an effective bactericidal or sanitizing treatment. Utensils and portable equipment used in processing operations shall be stored above the floor in clean, dry locations, and in a self-draining position on racks constructed of impervious, corrosion-resistant material.

C-I-P cleaning shall be used only on equipment and pipeline systems which have been designed and engineered for that purpose. When such cleaning is used, careful attention shall be given to the proper procedures to assure satisfactory cleaning. The established

cleaning procedure shall be posted and followed. Because of the possibilities of corrosion the recommendations of the cleaning compound manufacturer shall be followed with respect to time, temperature and concentration of specific acid or alkaline solutions and bactericides. Such cleaning operation shall be preceded by a thorough rinse at approximately 110-115° F., continuously discarding the water. All caps, plugs, special fittings, valve seats, cross ends and tee ends shall be removed and brushed clean. Following the circulation of the cleaning solution, the equipment and lines shall be thoroughly rinsed with lukewarm water and checked for effectiveness of cleaning. Immediately prior to starting the milk flow, the lines shall be given bactericidal treatment.

Stacks, elevators and conveyors shall be kept clean. All surfaces of homogenizers, high pressure pumps and high pressure lines shall be accessible for cleaning and kept in a sanitary condition. Packing glands on all agitators, pumps and vats shall be inspected at regular intervals and kept clean.

(b) Milk and cream cans--Washers.--The milk or cream cans shall be cleaned, sanitized, and dried before returning to the producers. Can washers shall be maintained in a clean and satisfactory operating condition and kept free from accumulation of scale which will adversely affect the efficiency of the washer.

(c) Milk Transport Tanks.--Milk transport tanks, sanitary piping, fittings and pumps, shall be cleaned and sanitized at least once each day and more frequently if necessary. If the tank is not to be used immediately for the pick up of another load of milk, it shall be washed

promptly, and given bactericidal treatment immediately before using. The outside of the tank truck shall be maintained in a clean condition.

PACKAGING AND GENERAL IDENTIFICATION

58.470 Containers.--(a) Packages or containers used for the packaging of dairy products shall be any commercially accepted container or packaging material which will satisfactorily protect the quality of the contents, through the regular channels of trade.

(b) Parchment liners for bulk butter packages shall be protected against dust, mold and other possible contamination. Prior to use the liners shall be treated as follows: The liners shall be completely immersed in a salt solution in a suitable non-corrosive container and held therein at the boiling point for not less than 30 minutes, and held in this solution until used. At least 15 pounds of salt shall be used for every 100 pounds of solution and the solution shall be changed frequently to maintain it in clean condition. The lined butter boxes shall be protected from possible contamination. This may be accomplished by alternately inverting one box over the other, until ready for use.

58.471 General identification.--Commercial bulk shipping containers for dairy products shall be legibly marked with the name of the product, net weight, name and address of processor or manufacturer, or other assigned plant identification, manufacturer's lot number (churn and vat number, etc.) and any other identification as may be required. Consumer packaged product shall be legibly marked with the name of the product, net weight, name and address of packer or distributor, packaging code and such other identification as may be required.

STORAGE OF FINISHED PRODUCTS

58.475 Dry storage.--The product shall be stored or so arranged in aisles, rows, or sections and lots or in such a manner as to be orderly, easily accessible for inspection or for cleaning of room. Dunnage or pallets shall be used when applicable. A dairy product shall not be stored with any product which would cause damage or impair quality of such dairy products.

58.476 Refrigerated storage.--All products requiring refrigeration shall be stored under such optimum temperatures and humidity that will properly maintain their quality and condition. Products shall not be placed directly on wet floors, or exposed to foreign odors or any condition such as drippage or condensation, causing package or product damage.

PROGRAM ADOPTION AND OPERATION

58.480 Adoption by State Agencies.--The United States Department of Agriculture Recommended Minimum Specifications for Dairy Plant Operations as set forth herein and the companion publication, United States Department of Agriculture Recommended Minimum Production Requirements for Milk to be Used for the Manufacture of Dairy Products, are primarily intended for adoption by State regulatory agencies.

When the aforementioned standards are adopted by a regulatory agency, such agency shall be authorized and responsible for performing the necessary dairy farm and plant inspections in accordance with the procedures established herein.

The regulatory agency shall be responsible for performing quarterly or semi-annual inspection of each processing plant in their respective state, and to advise the plant operators in regard to any

deficiencies or necessary corrections to obtain compliance with the adopted standards.

58.481 USDA survey.--The Inspection and Grading Branch, Dairy Division, Agricultural Marketing Service, United States Department of Agriculture, in conjunction with its responsibility for providing dairy products grading and quality control service, will on a continuing basis, review the effectiveness of the program operation within each state adopting these production requirements. This will be accomplished by (a) checking the quality of the finished dairy products produced in a state and (b) through cooperation with the responsible regulatory agency make spot checks of work performance of milk graders, laboratory and field staffs.

58.482 Adoption by Individual Plants, Affiliated Plants of Organization, Associations or Other Groups.--In areas where an individual plant, organization, association or any group of plants desire to adopt and operate under the Recommended Minimum Specifications for Dairy Plant Operations, and the State Agency has not adopted the program, the Inspection and Grading Branch, Dairy Division, Agricultural Marketing Service, United States Department of Agriculture, would provide the necessary quarterly or semi-annual plant inspection service. Fees for this service would be charged in accordance with fee schedules established in Department Regulations SRA-169. Under this plan of operation, each plant operator would assume responsibility for inaugurating and conducting a milk quality improvement program with his producers, in conformance with the Recommended Minimum Production Requirements for Milk to be Used for Manufacturing.

